

KARNAUKHOV, B.G.

BC

Action of fertilizers on the cultivated and underlying horizons of the pre-Asov chernozem. B. G. Karnaukhov (*Soviet Agron.*, 1950, 18, 43-49; *Soils & Fertil.*, 1951, 14, 142).—The surface horizon (0-20 cm.) is 2-3 times richer in available nutrients than is the sub-soil (20-40 cm.). The sub-soil is especially deficient in P and gives large responses to this nutrient. Mixing the soil of the two horizons adds considerably to the productivity of the entire soil.

C. B. NORTH.

B-5-1

COMMON ELEMENTS

MATERIAL INDEX

A.S.B.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

STONY SYMBOLS

RECORD NO.

RECORD HAS ONLY ONE

RECORDING

RECORD CAC QW 151

KARNAUKHOV, B. G.

Ref Zhur - Biol., No 3, 1958.

Author : Karnaikov, B. G.

Title : On the question of the influence of the

Subject : The influence of the agricultural crops on the soil
nutrient content of the soil in the fallow fields.

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spring wheat and black fallow and autumn wheat of
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its accumulation of organic matter. The soil was the heavily
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APPROVED FOR RELEASE: 06/13/2000

CIA-RDP86-00513R000720810012-0

On the question of the influence of the agricultural crops on the
nutrient content of the soil in the fallow fields. The author
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U.S.S.R. Cultivable Plants - Grains.

1-6

Ref Zhur - Biol., No 3, 1958, 1961.

contained somewhat more N than that planted on previously
fallow plots. Before ear-formation the wheat on the previ-
ously fallow fields contained 2.0% then that planted
on fields which had previously been planted in sunflower
or spring wheat. Wheat on fallow land absorbs nutritive
substances from the soil faster and in larger quantities
than on land which had previously been planted. On previ-

KARNAUKHOV, B.G.

Evaluating methods determining the moisture coefficient in
wilting [with summary in English], Pochvovedenie no. 6:102-105
Ja '58. (MIRA 11:7)

1. Rostovskiy gosudarstvennyy universitat.
(Soil moisture)
(Plants--Water requirements)

KARNAUKHOV, G., inzhener.

Against avoidance of responsibility in deciding technical problems.

Grazhd.av.13 no.7:20 J1 '56.

(MLRA 9:9)

(Airplanes--Maintenance and repair)

KARNAUKHOV, G., inzh.

Service dock for the IL-18. Grazhd. av 17 no.3:16
Mr '60. (MIRA 13:6)

(Airplanes--Maintenance and repair)

KARNAUKHOV, G., inzh.

Push mechanization. Grazhd.av. 17 no.7:6-7 J1 '60.

(Aeronautics--Maintenance and repair) (MIRA 13:8)

KOROSTASHEVSKIY, Rafail Vladimirovich; ZAYTSEV, Aleksey Matveyevich;
LEYKAND, M.A., inzh., retsenzent; KARNAUKHOV, G.F., inzh.,
retsenzent; GRIGORASH, K.I., red.; NOVIK, A.Ya., tekhn.red.

[Antifriction bearings used in airplane construction] Avia-
tsionnye podshipniki kachenia. Moskva, Oborongiz, 1963.
339 p. (MIRA 16:11)

(Bearings (Machinery))
(Airplanes--Design and construction)

KARNAUKHOV, G. G.
CA

Mulching the meadow solonchak soils of the Don bot
tomlands G. G. Karnaukhov. *Izvestiya Vsesoyuznogo Nauchnogo
Centra, 1949, No. 3, 101-102. The water-soluble salts, HCO_3 , Cl ,
 SO_4 , Ca , Mg , and Na , decrease on the mulched plots,
while the NO_3 and available P increase. With the de-
crease in temp. and increase in moisture content, the
total effect of mulching is a considerable increase in crop
yields. L. S. Bolin.*

AS 50 50.6 REFERENCE TO LITERATURE CLASSIFICATION

MALAKHOV, Zosim Stepanovich; BERNZNIKOV, Viktor Vasil'yevich;
KHURSIN, Leonid Aleksandrovich; KARNAUKHOV, G.T.,
red.; KARASEV, A.Ye., red.

[Ship towing] Buksirovka korablei. Moskva, Voenizdat,
1964. 110 p. (MIRA 17:9)

KACHERET, I.G.; GORA, V.Ye., inzh., retsebnik; KACHERET, I.G.,
inzh., red.

[Gantry cranes and their use] Krasnoye znanye i kakh pro-
menenie. Moskva, Mashinostroyeniye, 1964. 171 p.

(NINA 1212)

ISHIMBAYEV, Tamerlan Veniaminovich; NISNEVICH, Abram Samuilovich;
KARNAUKHOV, G.T., red.

[Repair of diesel locomotive revolution regulators] Remont regulatorov chisla oborotov teplovoznnykh dizelei. Moskva, Transport, 1965. 44 p. (MIRA 18:7)

MADATOV, M. I.; Kostavich; KAPNAUKHOV, G.T., red.; IVANOV, A.I.,
red.

[Underwater repair of ships and other vessels] Podvoynyi
remont korabli i sudov. Moskva, Voenizdat, 1965. 279 p.
(NIRA 15,0)

Karnaukhov, Ivan Vedorovich

5/5
193.101
.21
1956

Traktor "Stalinets-80"
(Tractor "Stalinets-80" by) I. F. Karnaukhov i V. A. Shokhin. P. Pecher. Izd.

Leningrad, Izdatkhimiz, 1956

128 s. Illus., Diagrams, Graphs, Tables (Uchebnykh i Spetsialnykh Pomochnykh Dlya
Inzhenerov i Tekhnicheskikh Rabotnikov)

Bibliography: 1. (1956)

KARNAUKHOV, IVAN FEDOROVICH

ANOKHIN, Vasily Ivanovich; BOLTINSKIY, Vasily Nikolayevich, akademik;
~~KARNAUKHOV, Ivan Fedorovich~~; ROZANOV, Vladimir Grigor'yevich;
SMIRNOV, A.G., redaktor; PEVZNER, V.I., tekhnicheskiy redaktor;
GOR'KOVA, Z.D., tekhnicheskiy redaktor

[Tractors] Traktory. Pod red. V.N.Boltinskogo. Izd. 2-oe, dop. i
perer. Moskva, Gos. izd-vo sel'khoz.lit-ry, 1957. 420 p.

(MIRA 19:11)

1. Moskovskiy institut mekhanizatsii i elektrifikatsii sel'skogo
khozyaystva (for Anokhin, Boltinskiy, Karnaukhov). 2. Gosudar-
stvennyy soyuznyy nauchno-issledovatel'skiy avtomobil'nyy i avto-
motornyy institut (for Rozanov)

(Tractors)

KARNAUKHOV, I.F., kandidat tekhnicheskikh nauk.

Visual aids on the automobile and tractor. Politekh.obuch.
no.7:92-95 J1 '57. (MIRA 10:7)
(Automobiles) (Tractors) (Visual aids)

ANOKHIN, Vasilii Ivanovich; BOLTINSKIY, V.N., akademik; KARNAUKHOV,
I.F.; ROZANOV, V.G.; BANNIKOV, S.A., red.; GOR'KOVA, Z.D.,
tekhn.red.

[Tractors] Traktory. Pod red. V.N.Boltinskogo. Izd.3., dop.
i perer. Moskva, Gos.izd-vo sel'khoz.lit-ry, 1960. 511 p.
(MIRA 13:9)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni
V.I. Lenina (for Boltinskiy).
(Tractors)

FOGEL', Ya.M., SLABOSPITSKIY, R.P., KARNAUKHOV, I.M.

Mass-spectrometric investigation of the secondary positive and negative ion emission, arising in the bombardment of the surface of Mo by positive ions. Zhur. tekhn. fiz. 30 no.7:824-834 J1 '60. (MIRA 13:8)

1. Khar'kovskiy gosudarstvennyy universitet im. A.M. Gor'kogo.
(Molybdenum) (Mass spectrometry) (Ions)

D. I.; ZINCHENKO, I. S.; KARNENKOV, I. M.; SLABOSPITSKY, R. P.; TARS

Source of Polarized Deuterons."

Report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22
Feb 64.

KhFTI (Ukrainian Physico Technical Inst)

I 7237-66 EWT(1)/EPA(sp)-2/EPT(c)/EPA(w)-2 AT
ACC NR: AP5025906 SOURCE CODE: UR/0057/65/035/010/1897/1901

AUTHOR: ^{44, 55}Yekhichev, O.I.; ^{44, 55}Zinchenko, G.N.; ^{44, 55}Zinchenko, N.S.; ^{44, 55}Karnaukhov, I.M.;
^{44, 55}Slabospitskiy, R.P.

ORG: none

TITLE: Mass spectrometric investigation of a source of positive ions operating at a low gas pressure

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 35, no. 10, 1965, 1897-1901

TOPIC TAGS: ion source, hydrogen ion, helium, ^{21, 44, 55}ion beam focusing, chromatic aberration

ABSTRACT: This paper reports tests of an ion source, discussed in more detail elsewhere (G.N.Zinchenko. Diplomnaya rabota, KhGU, 1962), which operates at gas pressures from 10^{-4} to 10^{-6} mm Hg. The ion source employs an electron gun using a flat tungsten-barium cathode with a 2 mm diameter emitting surface, a focusing electrode, and a plane accelerating electrode located 0.5 cm from the cathode and having a 2 mm diameter opening through which the electrons enter the ionizing region. The electron beam is caught on a flat collector located 6 cm from the gun. A negative potential is applied to the collector so that ions formed in the region between the gun and the collector are attracted toward the collector and enter the accelerating tube through

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a 5 mm diameter opening in the electrode. In the accelerating tube the ions were accelerated to 40 keV and focused on a point 150 cm distant. The focusing problem was somewhat complicated by the fact that the ions entered the accelerating tube with a rather wide range of energies, owing to the design of the ion source. Two different focusing systems were designed and tested, one employing an immersion lens and one employing two successive accelerating gaps. The design of these systems, which was accomplished with the aid of conventional design equations, is discussed at some length. Both performed satisfactorily. It was anticipated that owing to the low pressure in the ionizing region the production of multiply charged ions by successive ionization would be negligible. In order to test this the currents of singly and doubly charged He^3 ions were measured with a mass spectrometer as functions of the pressure of He^3 in the ion source. Both currents increased linearly with the pressure, and at the same rate, for pressures up to 10^{-4} mm Hg. The ratio of the He^{++} to the He^+ current was 5×10^{-3} ; this is in good agreement with the known ratio of the corresponding cross sections for He^4 . The maximum He^{++} current obtained was $0.02 \mu\text{A}$; this current was obtained with an electron beam current of 10 mA and a He^3 pressure of 10^{-4} mm Hg. The H^+ and H_2^+ ion currents were also measured when the ion source contained H_2 . Both currents increased linearly with pressure for pressures up to 5×10^{-5} mm Hg, but deviations from linearity were observed at higher pressures. The authors thank A.Ya.Taranov for his interest in the work. Orig. art. has: 1 formula, 7 figures, and 1 table. *4-5*

SUB CODE: NP/ SUBM DATE: 30Dec64/ ORIG REF: 004/ OTH REF: 002

Card 2/2 *118*

L 46961-66 EWT(1)/TWT(m)/EXP(t)/ETI IJP(c) JD/AT

ACC NR: AP6029802

SOURCE CODE: UR/0089/66/021/002/0131/0132

AUTHOR: Slabospitskiy, R. P.; Karnaukhov, I. M.; Kiselev, I. Ye.; Taranov, A. Ya.

ORG: none

TITLE: Source of polarize ons with 1.2 pump current

SOURCE: Atomnaya energiya v. 11, no. 2, 1966, 131-132

TOPIC TAGS: electric pol.rization, hydrogen ion, deuterium, ion beam, ion current, charge exchange, *ION SOURCE*

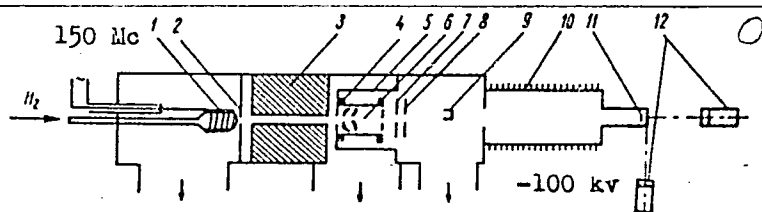
ABSTRACT: The described positive polarized deuterium-ion source is similar to an earlier source developed by the authors (Program and Abstracts of Papers of XVI Annual Conference on Nuclear Spectroscopy and Atomic Structure (Moscow, 1966), M., Nauka, 1966, p. 128) but employs a more efficient ionizer, and a higher vacuum is produced through the use of stainless steel and mercury and titanium pumps. The source is based on the principle of spin-sorting the atoms in an inhomogeneous magnetic field with subsequent adiabatic extraction to a weak field region (Fig. 1). Deuterium (or hydrogen) molecules are dissociated in an hf discharge at 150 Mcs. A magnetic field (20 kOe) focuses the atoms with electron spin projections antiparallel to the field, and defocuses the atoms with parallel spins. The focused atomic beam had an intensity 6×10^{15} atoms/sec in a 5 mm diameter, and was ionized by a coaxi-

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UDC: 539.103: 539.121.85: 539.128.2

ACC NR: AP6029802

Fig. 1. Diagram of source



ally moving electron beam. The tensor polarization at a current of 1.2 microampere was found to be -0.274 ± 0.012 . Orig. art. has: 1 figure [02]

SUB CODE: 20/ SUBM DATE: 01Apr66/ ORIG REF: 003/ OTH REF: 001 / ATD PRESS: 5089

Card 2/2 mt

L 44774-66 EXT(1) AT
ACC NR: AP6031272

SOURCE CODE: UR/0057/66/036/009/1681/1684

AUTHOR: Yekhichev, O. I.; Zinchenko, G. N.; Zinchenko, N. S.; Karnaukhov, I. M.;
Slabospitskiy, R. P.; Taranov, A. Ya.

ORG: none

TITLE: An atomic beam ionizer as a source of polarized ions

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 9, 1966, 1681-1684

TOPIC TAGS: ionizer, polarized ions, polarized ion source, atomic beam ionizer,

electron beam, ionization

ABSTRACT: An ionizer based on the principle of ion focusing as developed and patented earlier by Zinchenko and others, is described in some detail. In this arrangement, the electron beam is coaxial with, instead of perpendicular to, the beam of polarized atoms, thus increasing the ionization length. The electron beam was produced by an electron gun with an oxide cathode 5.5 and 9.6 mm in inner and outer diameter, respectively. The distance from the cathode to the anode was about 7 mm, and from the anode to the collector, 60 mm. The hole diameters in the cathode, anode, and collector were 6, 7, and 8 mm, respectively. An investigation of the characteristics of the device revealed that the transmission factor of the electrons was 100 percent through the anode orifice, and 92 percent through the entire ionizer. The divergence of the electron beam was small, the beam diameter varying between 6 and 8 mm. A hydrogen atom beam produced by the dissociation of molecules in glow-discharge and

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ACC NR: AP6031272

focused according to atomic spins in a field of a magnetic quadrupole was introduced into the ionizer. The measured efficiency of ionization was found to be 4.5×10^{-4} at a 90-mamp electron current and a 1400-v potential difference between the cathode and anode. The mass-spectrometric data on the composition of the focused atomic beam showed that it consists of hydrogen atoms, thus confirming the stated efficiency of ionization. This efficiency is 3 to 5 times higher than the results reported in the Proceedings of the International Symposium on Polarization Phenomena of Nucleons (Birkhauser Verlag, Basel und Stuttgart, 1961). Orig. art. has: 3 figures and 1 formula. [FP]

SUB CODE: 20/ SUBM DATE: 10Dec65/ ORIG REF: 004/ OTH REF: 001/ ATD PRESS: 5080

Card 2/2

ACC NR: AD 7001727

SOURCE CODE: UR/0048/66/030/012/2031/2036

AUTHOR: Slabospitskiy, R.P.; Karnaukhov, I.M.; Yekhichov, O.I.; Taranov, A.Ya.

ORG: Physicotechnical Institute, Academy of Sciences of the UkrSSR (Fiziko-
tekhnicheskii institut Akademii nauk UkrSSR)

TITLE: A source of polarized ions [Report, Sixteenth annual Conference on Nuclear
Spectroscopy and Nuclear Structure held at Moscow, 16 Jan. - 3 Feb. 1966]

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 12, 1966, 2031-2036

TOPIC TAGS: ion source, hydrogen ion, deuterium, ion beam, proton polarization,
deuteron polarization, polarized ion beam

ABSTRACT: The authors describe a source of polarized ions capable of producing a
0.3 μ A beam of polarized deuterons with a polarization tensor component P_{33} of -0.274 .
The source can also be employed to produce a beam of polarized protons. In this
source the electron spin components in a beam of deuterium atoms are separated in an
inhomogeneous magnetic field and the resulting beam of atoms with aligned electron
spins is ionized by electron impact. Owing to the coupling between the electron and
nuclear spins in the atom, there results a partially polarized beam of deuterons.
In the described device deuterium molecules were admitted through a palladium filter
to a Pyrex vessel coated on the inside with $(CH_3)_2SiCl_2$ where they were dissociated
by the 150 MHz field produced by a 1.5 kW oscillator. The deuterium atoms issued from
the dissociation vessel through a microcollimator of glass capillaries and traversed

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ACC NR: AP 7001727

the field of a magnetic quadrupole which focused the component of the beam having the electron spins parallel to the direction of motion and defocused the component having antiparallel electron spins. The polarized atomic beam then traversed the ionizer where the atoms were ionized by impact of electrons moving in the same direction as the atomic beam. The polarized deuteron beam was subsequently accelerated to the desired energy. The ionizer was shielded from fringe fields by a soft steel jacket, and a uniform axial magnetic field was produced within it by a pair of Helmholtz coils. The thermionic cathode and the electron accelerator, focusing, and collector electrodes of the ionizer had central openings for passage of the atomic beam. For a more detailed description of an improved version of this ionizer see abstract AP 7001307. The polarization of the deuteron beam was determined by measuring the angular distribution of neutrons from the $T(d,n)He^3$ reaction at the 107 keV $3/2^+$ resonance. The authors thank A.P.Klyucharev for assistance and support, and B.P.Ad'yasevich for providing the microcollimators. Orig. art. has: 6 formulas and 7 figures.

SUB CODE: 20

SUBM DATE: None

ORIG.REF: 007

OTH REF: 004

Card 2/2

ACC NR: AP 7001307

SOURCE CODE: UR/0057/66/036/012/2145/2147

AUTHOR: Slabospitskiy, R.P.; Karnaukhov, I.M.; Kiselev, I.Yo.

ORG: none

TITLE: An ionizer with a three-electrode electron gun and an ionizing efficiency of 0.002

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 12, 1966, 2145-2147

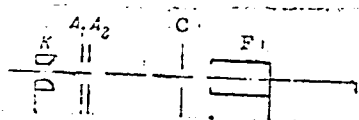
TOPIC TAGS: ion source, ionization, electron beam, molecular beam, electron gun

ABSTRACT: The authors briefly describe an electron beam ionizer suitable for use in a source of polarized ions. The device, a diagram of which is shown in the figure, is an improved version of the ionizer described elsewhere by O.I.Yeklichev et al. (ZhTF, 36, 1681, 1966). In this ionizer, the atomic beam to be ionized traverses the device axially, passing through central openings in the cathode K (see the figure), the first and second anodes A_1 and A_2 , and the electron collector C. The Faraday cup F, mounted 15 cm beyond the collector C served to measure the beam current during the experimental work. The first anode is made some 3000 V positive with respect to the cathode, thus assuring maximum electron emission. The electrons are decelerated in the gap between the two anodes to the optimum energy for ionization of the atomic beam (some 400 or 500 eV). Calculations indicate that the second anode should increase the ionization efficiency by a factor of 5 or 6. The electron-optics were such that when the collector

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UDC: 537.56

ACC NR: AP 7001307



C and the Faraday cage F were at the same potential, 95% of the electrons passed through the first anode, 90% of them passed through the second anode, and 70% of the cathode current was collected in the Faraday cup. The currents to the several electrodes

are presented graphically as functions of the second anode potential, and the curves are discussed briefly. The optimum conditions for ionization of an atomic beam were also determined experimentally and are presented graphically. The ionizer was tested in the polarized ion source described by Yekichev et al. (loc.cit.) and its ionizing efficiency was found to be 2×10^{-3} , which is some five times higher than the efficiency of an ionizer with a two-electrode electron gun. Orig. art. has: 1 formula and 3 figures

SUB CODE: 20, 09 SUBM DATE: 05Mar66 ORIG. REF: 003 OTH REF: 002

Card 2/2

KONEV, F.A.; KARNAUKHOV, I.N.

Filtration of injection solutions and other liquids in pharmaceutical practice. Apt.delo 9 no.2:65-67 Mr-Ap '60.

(MIRA 13:6)

1. Iz Khar'kovskogo nauchno-issledovatel'skogo khimiko-farmatsevticheskogo instituta.

(FILTER AND FILTRATION)

(PHARMACY)

KARNAUKHOV, I.P., red.

[Principles of agriculture; a textbook for normal schools]
Osnovy sel'skogo khoziaistva; uchebnoe posobie dlia pedinsti-
tutov. Moskva, Gos.uchebno-pedagog.izd-vo, 1959. 478 p.
(MIRA 12:11)
(Agriculture)

KARNAUKHOV, Ivan Prokof'iyevich, dots.; IVANKIN, Vasil'y Kirillovich, prof.; VERESOV, Konstantin Nikolayevich, dots.; BONDARENKO, Nikolay Vasil'yevich, dots.; NIKISHIN, Konstantin Georgiyevich, dots.; LANGE, K.F., kand. sel'khoz. nauk, dots. retsenzent; MERKULOV, M.P., kand. sel'khoz. nauk, dots., retsenzent; NOVIKOV, A.A., kand. sel'khoz. nauk, dots., retsenzent; NOSUL'KO, I.M., st. prepod., retsenzent; SAFRONOVA, O.G., st. prepod., retsenzent; YEFIMOV, A.L., red.

[Fundamentals of agriculture] Osnovy sel'skogo khoziaistva.
3. perer. izd. Moskva, Prosveshchenie, 1965. 646 p.

(MIRA 18:3)

1. Kuybyshevskiy pedagogicheskiy institut (for Lange, Merkulov).
2. Orlovskiy pedagogicheskiy institut (for Novikov, Nosul'ko, Safronova).

KARNAUKHOV, Ivan Prokof'yevich; LEONT'YEV, V.M.

[Field crop and meadow cultivation] Polevodstvo i lugovodstvo.

2. perer. i dop. izd. Moskva, Gos. izd-vo selkhoz. lit-ry,

1956. 2v.

(MLRA 10:4)

(Field crops stures and meadows)

LEONT'YEV, Vladimir Mitrofanovich, kand.sel'skokhoz.nauk; KARNAUKHOV,
Ivan Prokof'yevich, kand.sel'skokhoz.nauk; IVANOV, Dem'yan
Andreyevich, kand.sel'skokhoz.nauk; IVASHKINA, L.A., red.;
CHUNAYEVA, Z.V., tekhn.red.

[Field crop and meadow cultivation] Polevodstvo i lugovodstvo.
Izd.3., perer. Leningrad, Gos.izd-vo sel'khoz.lit-ry, 1960.
696 p. (MIRA 14:3)
(Field crops) (Pastures and meadows)

KARNAUKHOV, L.A.

One side scuffing of roller bit bodies. Azerb. neft.khoz. 38
no.9:17-19 S '59. (MIRA 13:2)
(Boring machinery)

KARNAUKHOV, L. A.; ANGELOPULO, O. K.

Technical and economic effectiveness of drilling soft rocks with
roller and blade bits. Neft. khoz. 38 no.7:43-46 J1 '60.
(MIRA 14:10)

(Turbodrills)

KARNAUKHOV, L.A.; SUSLOV, B.M.

Durability and wear resistance of rolling bearings of mass-produced roller bits. Trudy GrozNII no.10:21-31 '61.

(MIRA 15:2)

(Boring machinery)

KARNAUKHOV, L.A.

Causes of the premature wear of roller bits. Neft. khoz. 40
no.4:16-20 Ap '62. (MIRA 15:5)
(Chechen--Ingush A.S.S.R.--Oil well drilling--Equipment and
supplies)
(Mechanical wear)

ANGELOPULO, O.K.; KARNAUKHOV, L.A.

Effect of the type of bit on changes in the viscous properties
of muds when drilling in clay formations. Neft. khoz. 40 no.6:
35-36 Je '62. (MIRA 15:6)
(Oil well drilling fluids)

KARNAUKHOV, L.A.; KULIGIN, N.A.; LOSHKAREV, K.I.

New design for abrasive-cutting bit. Mash. i nef't. obor. no.3:
7-11'63 (MIRA 17:7)

1. Groznenskiy nef'tyanoy nauchno-issledovatel'skiy institut.

KARNAUKHOV, L.A.; IZMAYLOV, L.B.

Causes of the wear of small-diameter casings. Neft. khoz. 41
no.6:17-21 Je '63. (MIRA 17:6)

BULATOV, V.V.; KARNAUKHOV, L.A.

Increasing the effectiveness of rock disintegration in the
drilling of deep wells. Neft. khoz. 41 no.7:13-17 JI'63
(MIRA 1967)

BULATOV, V.V.; KARNAUKHOV, L.A.

Increasing the efficiency of bits used in turbine drilling;
a topic for discussion. Neft. khoz. 41 no. 12:1-5 D '63.

KARNAUKHOV, L.A.

Industrial tests of MDRT-140 bits. Burenie no.7:3-4 '64. (MIRA 18:5)

1. Groznenskiy neftyanoy nauchno-issledovatel'skiy institut.

KARNAUKHOV, L.A.; DORODNOV, I.P.

Cutting-abrading stage bits with a wash-over system having
hard-alloy cutters. Burenie no.7:3-5 '65. (MIRA 18:12)

1. Grozneneskiy neftyanoy nauchno-issledovatel'skiy institut.

KARNAUKHOV, M.H., dots.

Late results of kumiss therapy [with summary in French]. Probl.tub.
35 no.5:71-76 '57. (MIRA 10:11)

1. Iz kafedry fakul'tetskoy terapii (zav. - dotsent S.V.Bazanova)
Bashkirskogo meditsinskogo instituta (dir. - dotsent N.F.Vorob'yev)
(TUBERCULOSIS, PULMONARY, ther.
kumiss)
(MILK, ther. use
kumiss in pulm. tuberc.)

KARNAUKHOV, Mikhail Nikolayevich, dotsent; TRUBITSYN, V.A., red.; ZAYNUL-
LINA, G.Z., tekhn.

[Bashkir kumiss and kumiss therapy] Bashkirskii kumys i kumysole-
chenie. Izd. 2., dop. i perer. Ufa, Bashkirskoe knizhnoe izd-vo,
1961. 200 p. (MIRA 14:11)

1. Bashkirskiy meditsinskiy institut.
(KUMISS)

L 33984-66

ACC NR: AR6017194

SOURCE CODE: UT/0058/63/000/012/A032/A032

AUTHOR: Karnaukhov, N. D.; Chukreyev, F. Ye.

TITLE: Transistor attachment for the introduction of a two-group operating mode in the AI-100 analyzer

SOURCE: Ref. zh. Fizika, Abs. 12A311

REF SOURCE: Tr. 6-y Nauchno-tekhn. konferentsii po yadern. radioelektron. T. 2. M., Atomizdat, 1965, 30-33

TOPIC TAGS: pulse height analyzer, transistorized circuit, pulse counting, multi-channel analyzer/ AI-100 pulse height analyzer

ABSTRACT: A transistor attachment for the AI-100 analyzer is described; it permits a two-group registration of pulses. In the development of the elements and of the circuit of the attachment, special attention was paid to the following questions: a) possibility of operation of the analyzer in the 100-channel variant and the smallest changes in its circuitry; b) linear registration of pulses from the first detector from the 1st to the 49th channels, and linear registration from the second detector from the 51st to the 99th channel; c) pulses of the first group must not be registered in the second group and vice-versa. The complete schematic diagram of the attachment is presented, and the operation of the analyzer with the attachment in the two-group mode is considered in detail. Structurally the attachment is in the form of a separate block, which is connected by means of a plug disconnect to the input unit of the analyzer. L. S. [Translation of abstract]

SUB CODE: 20, 09

Card 1/1

L 35372-66 EMT(d)/EMP(1) IUP(c) BR/QR

ACC NR: AR6017790

SOURCE CODE: UR/0058/66/000/001/A044/A044

AUTHORS: Karnaukhov, N. D.; Chukreyev, F. Ye.

TITLE: Transistorized number printer for the Al-100 analyzer

SOURCE: Ref. zh. Fizika, Abs. 1A396

REF SOURCE: Tr. 6-y Nauchno-tekhn. donferentsii po yadern. radioelektron. T. 2. M., Atomizdat, 1965, 120-124

TOPIC TAGS: spectrum analyzer, computer output, data readout/Al-100 analyzer spectrum

ABSTRACT: The proposed number printer is divided into three parts: the code block, the commutation unit, and the control circuit. The process of writing out the readings from one decade or group of four flipflops, with a scale factor 16, is considered. The commutation unit is intended to produce the required access sequence of the analyzer flipflops. The printer develops a signal denoting the end of the channel for the control circuit. The latter performs the function of the operator in the case of manual writing down of the spectrum. V. L. [Translation of abstract]

SUB CODE: 20, 09

Card 1/1

KARNAUKHOV, N.I.

Characteristics of soils in spruce forests along the middle
Angara in Ust'-Uda District, Irkutsk Province. Izv. Sib. otd.
AN SSSR no.8:107-112 '59. (MIRA 13:2)

1. Irkutskiy gosudarstvennyy universitet.
(Ust'-Uda District--Forest soils)

KARNAUKHOV, N.I.

Koymarskiy swamps of Tunka depression and the main trend for
their improvement. Trudy BKNII no.4:38-45 '60. (MIRA 15:3)
(Ulus Koymarskiy region--Swamps)

KARNAUKHOV, N.M.

Intensity of Ural diamond luminescence in X rays. Biul TSIIN tsvet.
met. no. 4:3-6 '58. (MIRA 11:5)

(Diamond mines and mining) (Luminescent substances)
(X rays--Industrial applications)

KARNAUKHOV, N. M., Candidate of Tech Sci (diss) -- "A study of the conditions of increasing the effectiveness of electrical separations of diamond-containing concentrates (On the example of the Ural deposits)". Irkutsk, 1959. 15 pp (Min Higher Educ USSR, Irkutsk Mining and Metallurgical Inst, Sci Res and Design Inst of Dressing and Mech Treatment of Useful Minerals "Uralsozdkhimbi"), 160 copies (ZL, No 20, 1959, 112)

KARNAUKHOV, N.M.; SAL'NIKOV, F.L.

Cleaning quartz of impurities by electrostatic separation. Obog. rud
7 no.2:18-20 '62. (MIRA 16:4)

1. Irkutskiy nauchno-issledovatel'skiy institut redkikh metallov.
(Quartz) (Electrostatic separators)

KARNAUKHOV, N.M.

Electric separation of granites and pegmatites. TSvet.
met. 35 no.7:80-82 J1 '62. (MIRA 15:11)
(Granite) (Pegmatite)
(Electrostatic separators)

KARNAUKHOV, N. M.; TARASOVA, T. B.

Deficiencies of EKS-1250 electric separators. TSvet. met. 35
no.10:84-85 0 '62. (MIRA 15:10)

(Electrostatic separators)

KARNAUKHOV, N.M.

Use of electrostatic separation in the retreatment of gold
containing slime and concentrates. TSvet. met. 38 no.5:15-18
My '65. (MIRA 18:6)

BOGDANOVICH, Galina Nikolayevna, kand. tekhn. nauk; BULAKOVSKIY, Vadim Ivanovich, kand. tekhn. nauk; GOLOVCHENKO, Pavel Sergeyevich, kand. tekhn. nauk; DEKHTYAR, Etya Mikhaylovna, inzh.; KARNAUKHOV, Nikolay Petrovich, inzh.; KLIMANOVA, Yekaterina Antonovna, kand. tekhn. nauk; KRAVTSOV, Boris Konstantinovich, kand. tekhn. nauk; LIBERMAN, Al'fred Davidovich, kand. tekhn. nauk; LUKASHENKO, Ivan Andreyevich, kand. tekhn. nauk; POGREBNYAK, Zinaida Feofanovna, kand. tekhn. nauk; ROKHLIN, Il'ya Aleksandrovich, kand. tekhn. nauk; TRET'YAKOV, Lev Dmitriyevich, kand. tekhn. nauk; TSATSKINA, Frida Naumovna; REZNICHENKO, I.Ye., red.; LEUSHCHENKO, N.L., tekhn. red.

[Handbook for construction laboratories] Spravochnik dlia stroitel'nykh laboratorii. Pod red. B.K. Kravtsova. Kiev, Gosstroizdat, 1962. 821 p. (MIRA 16:3)

1. Nauchnyye sotrudniki Akademii stroitel'stva i arkhitektury Ukr.SSR (for all except Reznichenko, Leushchenko).
(Building research--Handbooks, manuals, etc.)

L 44722-66 ENT(m)/ENT(j)/T IIP(c) RM

ACC NR: AR6019868 (N) SOURCE CODE: UR/0398/66/000/001/V026/V026

AUTHOR: Karnaukhov, N. S.

ORG: none

TITLE: Experience in manufacturing parts made of caprone and polyethylene

SOURCE: Ref. zh. Vodnyy transport, Abs. 1V209

REF SOURCE: Proizv. -tekhn. sb. Tekhn. upr. M-va rechn. flota RSFSR,
no. 3(47), 1965, 42-44

TOPIC TAGS: caprone, pneumatic servomechanism, ~~metal press~~, polyethylene,
NONMETAL PRESS

ABSTRACT: In 1964 a section was established at the Novosibirsk Navy Yard for
manufacturing parts made of caprone and polyethylene. Characteristics of a pneumatic
casting press, manufactured by the staff of the yard, are presented. Production

Card 1/2

UDC: 621.85.05+678.675.002.2

L 44722-66

ACC NR: AR6019868

technology of parts has been described. Sixty-eight steel press models have been manufactured. Orig. art. has: 2 figures. [Translation of abstract] [NT]

SUB CODE: 13/

Card 2/2

KARNAUKHOV, V.

SHATALOV, P., bukhgalter; SHELYAKINA, Ye.; BARABASH, M.; TARAN, G.;
KARNAUKHOV, V.; KAZAKIN, V.; YAL'TSEV, M.

Wages based on finished production. Sets.trud no. 8:115-123 Ag '57.
(MIRA 10:9)

1. Rukovoditel' normativno-issledovatel'skoy gruppy "Urglavmyaso" pri Kiyevskom myasokombinate (for Sshlyakina). 2. Starly inzhener normativno-issledovatel'skoy gruppy "Urglavmyaso" pri Kiyevskom myasokombinate (for Barabash). 3. Starshiy inzhener normativno-issledovatel'skoy gruppy "Urglavmyaso" pri Kiyevskom myasokombinate (for Taran). 4. Nachal'nik otдела truda i zarabotnoy platy Uralskogo Kaspyskogo rybopromyshlennogo tresta, g. Gur'yev Kazakhskoy SSR (for Karnaukov). 5. Nachal'nik otдела truda i zarabotnoy platy Glavmosstroya (for Kazakin). 6. Inzhener otдела truda i zarabotnoy platy Glavmosstroya (for Yal'tsev).
(Piecework)

PLOTNIKOV, N.N., prof.; KARNAUKHOV, V.,., kand. med. nauk; ANAN'INA, L.O.

An occupational disease of helminthologists. Trudy 1-go AMI 28:
49-55 '64. (MIRA 17:11)

1. Klinicheskoye otdeleniye Instituta meditsinskoy parazitologii
i tropicheskoy meditsiny imeni Ye.I. Martsinovskogo (dir. - prof.
P.G. Sergiyev, zav. otdeleniyem - prof. N.N. Plotnikov) i kafedra
obshchey terapii i professional'nykh zabolevaniy (zav. - deystvi-
tel'nyy chlen AMN SSSR prof. Ye.M. Tareyev) 1-go Moskovskogo
ordena Lenina meditsinskogo instituta imeni Sechenova.

Handwritten: 1957/11/11
FLEROV, G. M. and KERNAUKHOV, V. A. (Acad. Sci. USSR)

"Interaction of Accelerated Nitrogen Ions with Bismuth Nuclei,"

paper submitted at the All-Union Conf. on Nuclear Reactions in Medium and Low
Energy Physics, Moscow, 19-27 Nov 57

FLEROV, G. N., POLIKANOV, S. M., KARAMYAN, A. S., FASYUK, A. S., PARFANOVICH, D. M.
TARANTIN, N. I., KARNAUKHOV, V. A., DRUIN, V. A., VOLKOV, V. V., SEMCHINGIA, A. M.
OGANESYAN, Yu. Ts., KHALIZEV, V. I. and KHEBNIKOV, G. I.

"Experiments to Obtain Element 102." Dokl. Akad. SSSR, Vol. 120, No. 1.
73-5 (1958). In Russian.
Plutonium isotopes Pu^{239} and Pu^{240} were irradiated with oxygen ions, accelerated to 102 MeV. The nucleus so produced leaves the target, because of recoil and is picked up in a collector. This can be moved, in a time of 4-5 sec. over to nuclear emulsions which are designed to register α -particles. Alpha-particles of energy greater than 8.5 MeV are detected. These could come from $Pu^{239}, (O^{16}, 4-6n)$ $102^{289,290}$. The total number of α -particles with an energy exceeding 8.5 MeV (those of energy less than 7 MeV could come from platinum contamination) was 18 in the irradiation of Pu^{239} and 8 in the case of Pu^{240} . These figures would give cross-sections for formation of element 102 of 2×10^{-28} and $5 \times 10^{-28} \text{ cm}^2$, respectively.

21(7)

SOV/56-36-3-15/71

AUTHORS: Karnaikhov, V. A., Ter-Akop'yan, G. M., Khalizev, V. I.

TITLE: Reaction of the Capture of Two Neutrons in the Interaction Between N^{14} and the Nuclei of Some Elements (Reaktsiya zakhvata dvukh neytronov pri vzaimodeystvii N^{14} s yadrami nekotorykh elementov)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, No 3, pp 748-750 (USSR)

ABSTRACT: The interaction between heavy particles and nuclei, in which the so-called "capture" and "stripping" reactions occur, have already been dealt with by a number of papers which are discussed in short in the introduction. The authors of the present paper investigated the reaction of the capture of two neutrons in the interaction between accelerated N^{14} -ions and nuclei of various elements. The experiments were carried out on the external beam of the 150 cm cyclotron of the AS USSR. With fivefold-charged N^{14} -ions of an energy of ~ 92 Mev LiF -, Al - and Cu -targets were irradiated. The experimental arrangement is shown in form of a schematical drawing (Fig 1). Target thickness was chosen in such a manner that the nitrogen ions flying off from the target had an energy of ~ 55 Mev. Behind

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Reaction of the Capture of Two Neutrons in the Interaction Between N^{14} and the Nuclei of Some Elements

the target was a gold foil of 9μ thickness, in which the short range reaction products were absorbed. The arrangement further contained a stack of tantalum plates which was periodically shifted towards a luminescence β -counter which, under magnetic shield, was located at a distance of 2 m from the target. In front of the stilbene crystal (30 mm diameter, 30 mm height) of the counter there was a 1.5 mm thick aluminum absorber. The ion flux had a thickness of 0.1 - 0.3 μ a. The result of the irradiation showed a β -activity of the target with a half life of 7.5 ± 1 sec and a maximum energy of β -particles of $E_{\max} > 7$ Mev. Determination, no matter whether it concerns a capture- or a stripping-reaction, is carried out by analysis of the decay products of the compound nucleus. In the present case it was found that the compound nucleus was N^{16} ($T=7.35$ sec, $E_{\max} = 10.4$ Mev), which was produced by the capture of two neutrons from N^{14} . A peculiar feature of this reaction is the long range of this nucleus. A table shows the measured β -activities for various targets. With respect to the difference between the binding energies of the two neutrons in N^{16} and

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307/56-36-3-15/71

Reaction of the Capture of Two Neutrons in the Interaction Between n^{14} and the Nuclei of Some Elements

in the target nucleus $Q = E_{2n}(N^{16}) - E_{2n}(Z^A)$ (cf. Ref 2) it is found that with decreasing Q also activity decreases. The cross section of the reaction is given as $\sim 5 \cdot 10^{-28} \text{ cm}^2$ (ion energy range 55 - 92 Mev). The authors finally thank Professor G. N. Flerov for his interest and they also thank the cyclotron team under the supervision of Yu. M. Pustovoyt for the good functioning of this plant. There are 1 figure, 1 table, and 9 references, 3 of which are Soviet.

SUBMITTED: September 13, 1958

Card 3/5

FLEROV, G.N.; POLIKANOV, S.M.; KARAMYAN, A.S. [deceased]; PASYUK, A.S.;
PARFANOVICH, D.M.; TARANTIN, N.I.; KARNAUKHOV, V.A.; DRUIN, V.A.;
VOLKOV, V.V.; SEMCHINOVA, A.M.; OGANESYAN, Yu.TS.; KHAIZEV, V.I.;
KHLEBNIKOV, G.I.; MYASOYEDOV, B.F.; GAVRILOV, K.A.

Experiments to produce element No. 102. Zhur. eksp. i teor. fiz.
38 no.1:82-94 Jan '60. (MIRA 14:9)

1. Sotrudniki Ob"edinennogo instituta yadernykh issledovaniy (for
Polikanov, Oganessian, Gavrilov). 2. Sotrudnik Instituta geokhimii
i analiticheskoy khimii AN SSSR (for Myasoyedov).
(Transuranium elements)

86742

S/120/60/000/006/017/045

EO32/E314

26.1640

AUTHORS: Karnaukhov, V.A. and Mikheyev, V.L.

TITLE: Apparatus for Measuring the Total Thickness of α -active Deposits

PERIODICAL: Priory i tekhnika eksperimenta, 1960, No. 6, pp. 60 - 61

TEXT: The principle of the method is stated to be as follows. Consider an α -active deposit whose thickness is t . The average range of α -particles leaving the deposit along the normal to its surface is $R'_0 = R_0 - t/2$, where R_0 is the average range of α -particles emitted from a standard source whose thickness can be neglected. By determining the difference between R_0 and R'_0 one can find the total thickness of the deposit under investigation. Fig. 1 shows the apparatus employed by the present authors. The specimen under investigation 2 and the standard specimen 3 can be presented in turn to the window of the proportional counter 5. Both the specimen-holder and the proportional counter are mounted on the same metal tube 1. The tube can be evacuated and then filled

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Apparatus for Measuring the Total Thickness of α -active Deposits

with methane which was used as the working gas. The counting efficiency was 1.5×10^{-4} . The average range of α -particles was determined by altering the pressure of the gas. The gas pressure was measured by a mercury manometer. Fig. 2 shows some of the experimental curves obtained. They are all normalised to unity (the counting rate on the plateau was assumed to be equal to unity). Curve 1 was obtained with a Pu^{239} standard. The amount of plutonium determined from an α -count was found to be $20 \mu\text{g}/\text{cm}^2$ (PuO_2). Curve 2 refers to a Pu^{239} target prepared with the aid of tetra-ethylene glycol on a niobium foil. The thickness of the specimen, which was measured from the displacement relative to the standard curve, was found to be $200 \mu\text{g}/\text{cm}^2$ (PuO_2). The amount of plutonium calculated from the α -particle count was found to be $220 \mu\text{g}/\text{cm}^2$ (PuO_2). Curve 3 was obtained with the same target

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Apparatus for Measuring the Total Thickness of α -active Deposits as Curve 2 but with the target covered by an aluminium foil having a thickness of $390 \mu\text{g}/\text{cm}^2$. Curve 4 refers to a target of Pu^{241} . The α -count was due to an 8% impurity of Pu^{240} . The target was prepared with the aid of tetra-ethylene glycol on a niobium foil. The total thickness of the target was found to be $830 \mu\text{g}/\text{cm}^2$ (PuO_2). The amount of plutonium determined from the α -count was found to be $120 \mu\text{g}/\text{cm}^2$ (PuO_2). Curve 5 was obtained with a Pu^{240} target deposited by electrolysis on a nickel foil. The total thickness of the target was $520 \mu\text{g}/\text{cm}^2$ (PuO_2) and the amount of plutonium determined from the α -count was $110 \mu\text{g}/\text{cm}^2$ (PuO_2). In these experiments the thickness of the target was determined to an accuracy better than $70 \mu\text{g}/\text{cm}^2$ according to PuO_2 .
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E032/E314

Apparatus for Measuring the Total Thickness of α -active Deposits

Acknowledgments are expressed to G.N. Flerov and

S.M. Polikanov for interest in this work.

There are 2 figures and 2 Soviet references.

SUBMITTED: October 15, 1959

Card 4/4

8/11/20

S/056/60/039/001/038/048
006/8056

24.6600

AUTHORS:

Karnaukhov, V. A., Tarantin, N. I.

TITLE:

The Possibility of Proton Decay of Nuclei

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 39, No. 4(10), pp. 1106 - 1111

TEXT: It was the purpose of the present work to investigate the possibility of proton radioactivity and fixing the limits within which proton-active isotopes might exist. The binding energy of the last proton depends on the number of neutrons in the nucleus, and with growing Z , the change in the proton binding energy due to variation of A becomes slower. This is illustrated in Fig. 1 by $E_p(A)$ diagrams for Sc and Bi. Analytically, this may be expressed by a semiempirical formula by Weizsäcker. By means of this formula (1) the boundary of the range of nuclei that are stable with respect to proton emission may be fixed. Fig. 2 shows this in form of a $Z(N)$ diagram. It results herefrom that the proton instability in nuclei with odd Z occurs earlier, i.e., in the case of relatively heavy isotopes.

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84420

The Possibility of Proton Decay of Nuclei

S/056/60/039/004/048/048
B006/B056

The boundary of p-stability also moves away from the range of stable isotopes in transition to nuclei with larger Z . Nuclei with $Z > 60$ should lose more than 10 neutrons in order to become p-active. Moreover, the authors discuss a determination of the lifetimes of p-active isotopes and give some estimates; also the part played by the competing processes (α -, β^+ -decay, K-capture) is discussed. For the purpose of estimating lifetime, the p-decay is considered to be a passage of the proton through the Coulomb barrier, and a formula by Bethe is used. A comparison between the energy ranges (Table 1) leads to the result that p-active nuclei with $Z < 20$ are highly improbable, as also such with $Z > 50$; in the former case the β^+ -decay competes, and in the latter the α -decay. Also the angular momentum of proton motion influences the emission probability, and that considerably more than in α -decay (Table 2). A p-decay would, except from the ground state, be possible also from excited states. Excitation might be due to a β^+ -decay, so that delayed protons would occur (like in the emission of delayed neutrons from fission fragments); radiative transitions would here be competitive. Such a case is discussed by the example of Sc^{41} and As^{67} ($E_p = 1.8$ and ~ 1 Mev, respectively). Finally, the authors

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04120

The Possibility of Proton Decay of Nuclei

S/056/60/039/001/035/048
B006/B056

discuss possible reactions that may lead to the formation of p-active isotopes, and give estimates of their cross sections. The most favorable seem to be reactions which are caused by charged particles and lead to neutron emission of the nucleus concerned. In this case particles with odd Z are chosen for bombardment, and particles with even Z having relatively light isotopes are used as targets. Table 3 contains several such reactions, among others the following:

p-active nucleus	formation reaction	$E_{\text{threshold}}$ [Mev]	σ_{max} [cm ²]
Sc ³⁹	Ca ⁴⁰ (p,2n)	25	$5 \cdot 10^{-27}$
	Si ²⁸ (N ¹⁴ ,3n)	35	$1 \cdot 10^{-27}$
Mn ⁴⁷	Cr ⁵⁰ (p,4n)	50	$1 \cdot 10^{-28}$
	A ³⁶ (N ¹⁴ ,3n)	35	$1 \cdot 10^{-27}$
As ⁶³	Ge ⁷⁰ (p,8n)	85	$< 5 \cdot 10^{-30}$
	Fe ⁵⁴ (N ¹⁴ ,5n)	70	$1 \cdot 10^{-28}$
Rb ¹⁰⁶	Zn ⁶⁴ (p,14,n)	64	$1 \cdot 10^{-27}$

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The Possibility of Proton Decay of Nuclei

84420

S/056/60/039/004/038/040
B006/B056

The authors thank Professor G. N. Flerov for suggesting the subject and for discussions. V. I. Gol'danskiy is mentioned. There are 3 tables and 11 references: 5 Soviet, 2 Canadian, and 4 US.

SUBMITTED: June 15, 1960

Card 4/4

83748
S/056/60/038/004/041/048
B006/B053

24.6600

AUTHORS:

Karnaukhov, V. A., Oganessian, Yu. Ts.

TITLE:

Gamma Radiation¹⁴ Resulting From the Interaction Between Accelerated C¹² Ions and Sn Nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 4, pp. 1339 - 1340

TEXT: In nuclear reactions induced by accelerated heavy ions, compound nuclei having high excitation energies and angular momenta are formed. V. M. Strutinskiy assumed that in the decay of such compound nuclei the main part of the angular momentum is carried off by gamma quanta, and so the nucleon emission is accompanied by a gamma cascade. In the present "Letter to the Editor", the authors consider the energy spectrum of the gamma quanta accompanying the irradiation of Sn by 78-Mev C¹² ions. In this case, the compound nucleus energy is estimated to be about 66 Mev and, the maximum angular momentum to be about 45 \hbar . The experiments described were carried out on the 150-centimeter cyclotron of the

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Gamma Radiation Resulting From the Interaction ⁸³⁷⁴⁸ S/056/60/038/004/041/048
Between Accelerated C¹² Ions and Sn Nuclei B006/B053

IAE AN SSSR (Institute of Atomic Energy of the AS USSR); the intensity of the outer beam was $\sim 5 \cdot 10^6$ particles/sec. The gamma quanta emitted by a target 24 mg/cm² thick were recorded (in the range 0.4 - 4 Mev) by a luminescence spectrometer (CsJ), a photomultiplier of the type C-993 (S-993), and a multi-channel analyzer of the type ЭЛА-2 (ELA-2). All important experimental details are described in the following. The energy spectrum of the gamma quanta is shown in Fig. 1 in the form of $NE = f(E)$, where N denotes the number of quanta in the channel corresponding to E. The spectrum is a continuous one with a peak at 0.8 Mev. The diagram also shows the spectrum of the gamma radiation from $Sm^{150}(n, \gamma)$, which reaction is typical of compound nucleus formation (by thermal neutrons) with an angular momentum practically the same as in the ground state. This spectrum has a peak at ~ 2 Mev. As a comparison of these two spectra shows, the transition of the nucleus to the ground state mainly takes place with emission of softer gamma quanta than in the case of radiative neutron capture. Fig. 2 shows the gamma spectrum recorded at a distance R of 5 cm between crystal and target (the same

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Gamma Radiation Resulting From the Interaction S/056/60/038/004/041/048
Between Accelerated C^{12} Ions and Sn Nuclei B006/B053

as shown in Fig. 1), and, for comparison, the spectrum taken at $R = 0.2$ cm, the latter being normalized so that the areas between the curves and the E-axis became equal. It is shown that, by reducing the distance R, the number of pulses corresponding to quanta with $E = 1.5 - 4$ Mev is increased. This fact is ascribed to the occurrence of cascades of soft gamma quanta. The mean number of gamma quanta recorded at the same time (with $R = 0.2$ cm) were found to be about 1.8. For the mean number of gamma quanta in one cascade, a rough estimate gives a value not less than ten. Finally, the authors thank Professor G. N. Flerov for his advice, and A. B. Malinin for his assistance. There are 2 figures and 4 Soviet references.

SUBMITTED: January 14, 1960

Card 3/3

KARNAUKHOV, V.A.

"Molecule" of two carbon nuclei. Priroda 49 no.11:96-97 N '60.
(MIRA 13:11)

1. Ob'yedinennyy institut yadernykh issledovaniy, Dubna.
(Carbon) (Nuclei, Atomic)

KARNAUKHOV, V. A. -

Cand Phys-Math Sci - (diss) "Features of the decay of constituent nuclei with high angular moment." Moscow, 1961. 10 pr;
(Scientific Research Institute of Nuclear Physics of the Moscow State Univ imeni M. V. Lomonosov); 200 copies; price not given;
(FL, 5-61 sup, 173)

DONETS, Ye.D.; KARNAUKHOV, V.A.; KUMPF, G.; GVOZDEV, B.A.; CHUBURKOV,
Yu.T.; SARANTSEVA, V.R., tekhn. red.

[Study of the nuclear reaction $\text{Th}_{90}^{232}(\text{Ne}_{10}^{22}, 4n)\text{Fm}_{100}^{250}$] Izuchenie
iadernoi reaktsii $\text{Th}_{90}^{232}(\text{Ne}_{10}^{22}, 4n)\text{Fm}_{100}^{250}$. Dubna, Ob"edinennyi
in-t iadernykh issl., 1962. 10 p. (MIRA 15:4)
(Nuclear reactions)

POLIKANOV, S.M.; DRUIN, A.V.; KARNAUKHOV, V.A.; MIKHEYEV, V.L.; PLEVE,
A.A.; SKOBELEV, N.K.; SUBBOTIN, V.G.; TER-AKOP'YAN, G.M.;
FOMICHEV, V.A.

[Spontaneous fission with an anomalously short period] Spon-
tannoe delenie s anomal'no korotkim periodom. Dubna, Ob"edi-
nennyi in-t iadernykh issl. Pt.1. 1662. 17 p. (MIRA 15:1)
(Nuclear fission) 1962

S/056/62/042/004/008/037
B102/B104

AUTHOR: Karnaukhov, V. A.

TITLE: Anomalous α -emitters in the Po-Ra region

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,
no. 4, 1962, 973-978

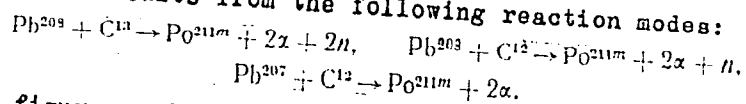
TEXT: Continuing previous studies (Ref. 1: ZhETF, 37, 1266, 1959) the author investigates the α -emitters which are produced when lead isotopes are bombarded by accelerated carbon ions. Bombardment was carried out with ~ 80 -Mev C^{12} ions accelerated in a 150-cm cyclotron; the beam intensity was 0.2-0.3 μ a. The short-lived reaction products were recorded with an apparatus described in Ref. 1. Nuclear photoemulsions of type НИКФЭ-Т-1 (NIKFI-T-1) and an α -spectrometer with CsI(Tl) crystal were used as detectors. The spectrometer was connected with an ФЕУ-11-В (FEU-11-B) photomultiplier. The counter pulses were fed to a cathode follower and then over a 40-m cable to the linear amplifier. To avoid electric wires a transmission circuit was placed at the amplifier output; it was followed by an integral discriminator. For pulse-height analysis

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Anomalous α -emitters in the ...

S/056/62/042/004/008/037
B102/B104

order of 10^{14} , a factor of 10^5 higher than the highest one known up to now ($\text{Po}^{211\text{m}}$). It may be due to the complex structure of this nucleus whose nucleons are in different (partially excited) states. The probability of α -particles formation by such nucleons is, of course, very low. The $\text{Po}^{211\text{m}}$ formation results from the following reaction modes:



There are 3 figures and 1 table.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: November 14, 1961

Card 3/8 3

38855

S/056/62/042/006/007/047
B104/B102

00-6600

(2706)

AUTHORS: Polikanov, S. M., Druin, V. A., Karnaukhov, V. A.,
Mikheyev, V. L., Plev, A. A., Skobelev, N. K.,
Subbotin, V. G., Ter-Akop'yan, G. M., Fomichev, V. A.

TITLE: Spontaneous fission with an anomalously short period. I

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42,
no. 6, 1962, 1464 - 1471

TEXT: U^{238} was irradiated by accelerated Ne^{22} and O^{16} ions from the internal beam of the 300 cm cyclotron of the OIYaI. By means of an ionization chamber, spontaneous fission fragments of an unknown isotope having a half life of ~ 0.02 sec were recorded. The nucleus obtained is assumed to be in an isomeric state with spontaneous fission probability increased (by more than 10^9 times). From experimental data the atomic number is estimated to be ≤ 100 . G. N. Flerov, Corresponding Member AS USSR, is thanked for supervising the investigation. There are 5 figures and 1 table.

Card (1/2)

Spontaneous fission with an anomalously...

S/056/62/042/006/007/047
B104/B102

ASSOCIATION: Ob"yedinennyy institut yadernykh issledovaniy (Joint Institute
of Nuclear Research)

SUBMITTED: January 24, 1962

Card 2/2

39661
S/056/62/043/001/003/056
B181/B102

AUTHORS: Donets, Ye. D., Karnaukhov, V. A., Kumpf, G., Gvozdev, B. A.,
Chuburkov, Yu. T.

TITLE: The nuclear reaction ${}_{90}\text{Th}^{232}({}_{10}\text{Ne}^{22}, 4n){}_{100}\text{Fm}^{250}$

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 43,
no. 1(7), 1962, 11 - 15

TEXT: Measurements were made of the dependence of the
 ${}_{90}\text{Th}^{232}({}_{10}\text{Ne}^{22}, 4n){}_{100}\text{Fm}^{250}$ reaction cross section on the energy of the
bombarding ions. The ions were extracted from the 300 cm cyclotron of
the OIYaI. A thorium foil, 2 - 2.6 mg/cm² thick, served as a target and
a 3 μ thick silver foil chemically prepared with teneoiltrifluoro acetone,
was used to collect the recoil nuclei. Fermium (yield 50 %) was separated
from the organic phase by anodic precipitation. Fm^{250} was identified
from its 7.45 Mev α-emission. The 7.65 Mev line of Po^{214} was found to
interfere. The reaction cross section has its maximum of $\sim 2.5 \cdot 10^{-31} \text{ cm}^2$
Card 1/2

The nuclear reaction ...

S/056/62/043/001/003/056
B181/B102

at an ion energy of 107 Mev, and has a half-width of about 11 Mev. The cross section of the reaction ${}_{92}\text{U}^{238}({}_{8}\text{O}^{16}, 4n){}_{100}\text{Fm}^{250}$, which was investigated earlier (T. Sikkeland, S. G. Thompson, A. Ghiorso, Phys. Rev., 112, 543, 1958; V. P. Perelygin, Ye. D. Donets, G. N. Flerov, ZhETF, 37, 1558, 1959), reached a maximum of 10^{-30} cm^2 , that of the reaction ${}_{94}\text{Pu}^{241}({}_{6}\text{C}^{13}, 4n){}_{100}\text{Fm}^{250}$ one of $6 \cdot 10^{-30} \text{ cm}^2$. The experiments showed that the maximum cross section decreases much faster with increasing mass of the bombarding particles than is predicted by the theory. This is explained as follows: Either the nucleus is deformed in a collision so that the Coulomb barrier increases, or the system of the two nuclei is excited to perform vibrations so that the probability of fission prior to emission of the first neutron increases. There are 3 figures and 1 table.

ASSOCIATION: Ob'yedinennyy institut yadernykh issledovaniy (Joint Institute of Nuclear Research)

SUBMITTED: January 24, 1962
Card 2/2

KUMPF, G; KARNAUKHOV, V.A.

[Characteristics of the decay of dysprosium compound
nuclei with high angular momentum] Osobennosti raspada
sostavnykh iader disproziia s vysokim uglovym momentom.
Dubna, Ob"edinennyi in-t iadernykh issledovani, 1963. 13 p.
(MIRA 16:10)

(Dysprosium--Decay)

FLEROV, G.N.; KARNAUKHOV, V.A.

[Effect of large angular momenta in nuclear reactions with heavy ions]Effekt bol'shikh uglovykh momentov v iadernykh reaktsiyakh s tiazhelymi ionami; doklad, predstavlennyi na Mezhdunarodnyi simpozium po priamym vzaimodeistviyam i mekhanizmam iadernykh reaktsii (Padua). Dubna, Ob"edinennyi in-t iadernykh issledovani, 1962. 14 p. (NIRA 16:10)
(Nuclear reactions)

KARNAUKHOV, V. A.; TER-AKOP'YAN, G. M.; PETROV, L. A.; SUBBOTIN, V. G.

3

"Experiments on Observation of Radioactive Decay with the Emission of Protons."

report submitted for All-Union Conf on Nuclear Spectroscopy, Tbilisi, 14-22
Feb 64.

Joint Inst for Nuclear Res, Dubna.

FLEROV, G. N.; KARNAUKHOV, V. A.

"I.-Mechanism and Products of Heavy Ion Reactions. II.-Fission Physics."

report submitted for Intl Conf on Low & Medium Energies, Nuclear Physics,
Paris, 2-8 Jul 64.

KARNAUKHOV, V.A.; TER-AKOP'YAN, G.M.; PETROV, L.A.; SUBBOTIN, V.G.

Experimental observation of proton emission in radioactive
decay. Zhur. eksp. i teor. fiz. 45 no.4:1280-1282 0 '63.
(MIRA 16:11)

1. Ob'yedinennyy institut yadernykh issledovaniy.

FLEEROV, G. N.; KARNAUKHOV, V. A.; TER-AKOPYAN, G. M.; PETROV, L. A.; SUBBOTIN, V. G.,
Dubna

"On the proton decay of radioactive nuclei."

report submitted for Intl Conf on Low & Medium Energies Nuclear Physics,
Paris, 2-8 Jul 64.

FLEROV, G.N.; KARNAUKHOV, V.A.; TER-AKOPYAN, G.M.; PETROV, L.A.;
SUBBOTIN, V.G.; KULIKOVA, L.V.[translator]

On the proton decay of radioactive nuclei. Dubna,
Ob"edinennyi in-t iadernykh issledovaniy, 1964. 24 p.

KARNAUKHOV, V.A.; TER-AKOPYAN, G.M.

Proton decay of radioactive nuclei. Priroda 53 no.7:66-64 '64.

(MIRA 17:7)

1. Laboratoriya yadernykh reaktsiy Ob'yedinennogo instituta yadernykh issledovaniy, Dubna.

ACCESSION NR: AP4037563

S/0056/64/046/005/1545/1552

AUTHORS: Kumpf, G.; Karnaukhov, V. A.

TITLE: Some features of the decay of compound dysprosium nuclei with large angular momenta

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 5, 1964, 1545-1552

TOPIC TAGS: dysprosium, compound nucleus, excitation spectrum, high energy particle, nuclear spin, nuclear structure, nuclear transformation

ABSTRACT: In view of the advantages offered by heavy ions when used as bombarding particles to investigate the behavior of compound nuclei over a wide range of excitation energies and of angular momenta, measurements were made of the energy dependence of the cross sections for the following nuclear reactions: $\text{Cd}^{116}(\text{Ar}^{40}, 7n)\text{Dy}^{149}$,

Card 1/4

ACCESSION NR: AP4037563

$\text{Cd}^{116}(\text{Ar}^{40}, 6n)\text{Dy}^{150}$, $\text{Cd}^{116}(\text{Ar}^{40}, 5n)\text{Dy}^{151}$, $\text{Cd}^{114}(\text{Ar}^{40}, 5n)\text{Dy}^{149}$,
 $\text{Cd}^{114}(\text{Ar}^{40}, 4n)\text{Dy}^{150}$, and $\text{Cd}^{114}(\text{Ar}^{40}, 3n)\text{Dy}^{151}$. The reason for

choosing Cd as the target was that the (Ar^{40}, xn) reactions yield α -active rare-earth isotopes, which can be readily identified without the use of chemical separation. The targets were enriched isotopes of Cd^{116} . The experiment and the registration procedure are described in detail. The experimental data are analyzed on the basis of the generalized jackson model (constant nuclear temperature) with allowance for the rotation and limitation of the possible values of the spin. The calculated excitation functions are in good agreement with the experimental data with parameters $T = 3$ MeV and $J = 75 \hbar$ (limiting angular momentum), with the moment of inertia of the compound nucleus being that of the rigid body. "The authors thank G. N. Flerov for support, Professor I. Schintlmeister and K. Kaufmann of the Central Institute of Nuclear Research in Rossendorf for supplying the silicon detectors, the cyclotron crew and A. S. Pasyuk and

Card 2/4

ACCESSION NR: AP4037563

I. A. Shelayev for uninterrupted operation of the cyclotron, and
Ye. A. Loginova for performing the calculations on the electronic
computer." Orig. art. has: 5 figures and 4 formulas.

ASSOCIATION: Ob"yedinenny*y institut yaderny*kh issledovaniy
(Joint Institute of Nuclear Research)

SUBMITTED: 08Aug63

DATE ACQ: 09Jun64

ENCL: 01

SUB CODE: NP

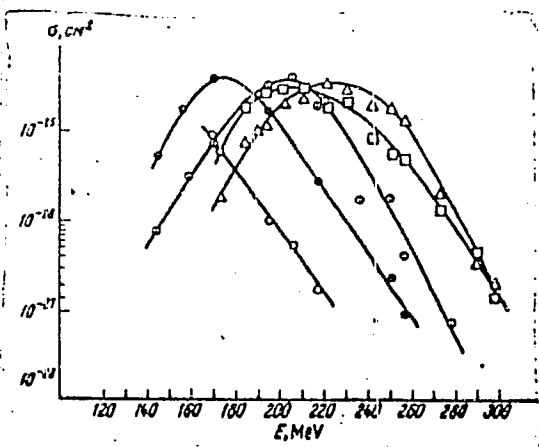
NR REF SOV: 003

OTHER: 010

Card 3/4

ACCESSION NR: AP4037563

ENCLOSURE: 01



Dependence of the cross sections on the particle energy (in the laboratory system) for the following reactions:

Δ - $\text{Cd}^{114}(\text{Ar}^{40}, 7n) \text{Dy}^{149}$, \odot - $\text{Cd}^{114}(\text{Ar}^{40}, 5n) \text{Dy}^{147}$
 \circ - $\text{Cd}^{114}(\text{Ar}^{40}, 3n) \text{Dy}^{145}$, \square - $\text{Cd}^{114}(\text{Ar}^{40}, 6n) \text{Dy}^{148}$
 \oplus - $\text{Cd}^{114}(\text{Ar}^{40}, 4n) \text{Dy}^{146}$

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